CLAIMS

1. A method of HARQ process configuration involving packet combining in a mobile communication system, wherein a plurality of HARQ processes are established in a transmitter and a receiver comprising the steps of:

configuring a plurality of HARQ processes of unrestricted use for data flows having different QoS requirements and

pre-configuring at least one reserved HARQ process for data flows of specific QoS requirements.

2. A method of HARQ process configuration in a mobile communication system, wherein a plurality of HARQ processes are established in a transmitter and a receiver comprising the steps of:

configuring a minimum number of HARQ processes according to a system parameter and

pre-configuring at least one additional HARQ process for specific data flows of high priority.

3. The method according to claim 1 or 2 comprising the additional steps of:

scheduling a plurality of data flows from at least one priority queue and emptying the priority queue to one or a plurality of configured HARQ processes for transmission.

4. The method according to one of claims 1-3, wherein the reserved and/or additional HARQ process has a limited functionality compared with a plurality of HARQ processes.

- 5. The method according to one of claims 1-4, wherein the reserved and/or additional HARQ process supports a maximum possible/lower modulation coding scheme (MCS) level compared with the plurality of HARQ processes.
- 6. The method according to one of claims 1-5, wherein the reserved and/or additional HARQ process supports a maximum possible/lower transport format resource combination (TFRC) compared with the plurality of HARQ processes.
- 7. The method according to one of claims 1-6, wherein the reserved and/or additional HARQ process supports Chase Combining or Incremental Redundancy according to available memory in the soft buffer.
- 8. The method according to one of claims 1-7, wherein for the reserved and/or additional HARQ process, a smaller soft buffer size is reserved at the receiver compared with that reserved for one of a plurality of HARQ processes.
- The method according to one of claims 1-8, wherein the transmitter signals to the receiver to use a separate re-ordering buffer for the reserved and/or additional HARQ process.
- 10. The method according to one of claims 1-9, wherein an HARQ process identification is signalled to the receiver.
- 11. The method according to one of claims 1-10, wherein the number of HARQ processes and/or functionality of additional processes are matched to the round trip delay (RTD) caused by transmission time and processing time at the receiver and the transmitter.
- 12. The method according to claim 1, wherein the number of configured HARQ processes varies dynamically in accordance with a system parameter.
- 13. The method according to claim 2 or 12, wherein the system parameter is one of round trip time, processing time, traffic burstiness, quality of service,

modulation coding scheme, timing of shared channels and minimum transmission time interval.

- 14. The method according to one of claims 1-13, wherein an HARQ process configuration is signalled from the transmitter to the receiver by HARQ protocol control packet.
- 15. The method according to claim 14, wherein an HARQ protocol control packet is identified by inband signalling.
- 16. The method according to one of claims 14 or 15, wherein control information may be signalled explicitly or implicitly.